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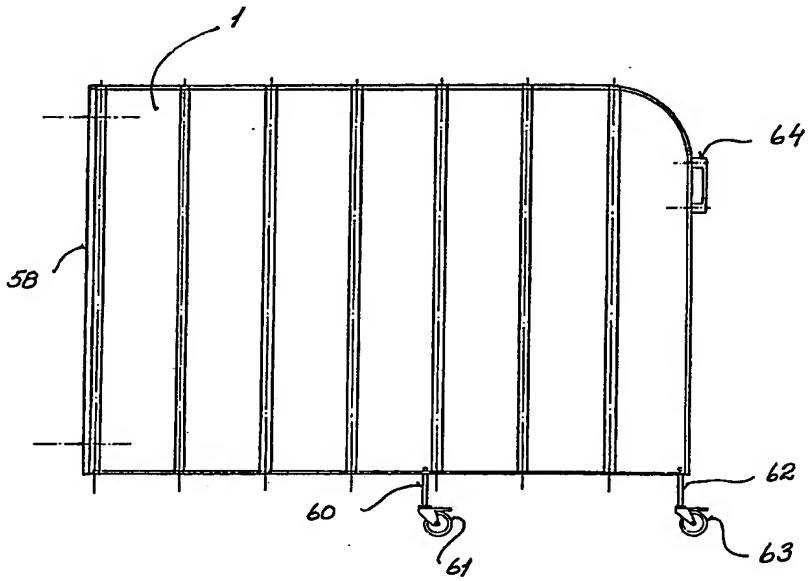

(57) Abstract

The present invention relates to an apparatus for realizing a switchable, for example retractible and protractible, screen partition which is releasably secured to a wall at one side edge, and which includes a number of panel-shaped elements (1) pivotal in at least one direction and interconnected with on another, and a support (29, 60-63) on at least one of the elements (1), the support resting on a substrate, for example a floor, and releasable anchorage means being provided between the wall and the element most proximal the wall.

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DEVICE FOR ARRANGEMENT OF A WALL

The present invention relates to an apparatus for realizing a switchable, for example retractible and protractible, screen partition which is releasably secured to a wall at its one side edge.

Various possibilities for screening-off are desirable in many contexts. This applies, in particular, in the care sector at different nursing and treatment wards, but the possibility for screening-off is also desirable at other workplaces such as offices, workshops and the like. The screen partitions in question should at least be mobile or relocatable in a simple manner but it would,naturally, be even better if the screen partitions could, as it were, more or less disappear when they are no longer immediately needed. Prior art screens of such type are simply more or less permanent and, as a result, extremely difficult to relocate. There are also wheel-borne, textile taught frames which, while being easy to reset and displace, require considerable storage space when they are no longer needed. Moreover, as far as this latter design is concerned, frames of this type are very often unnecessarily left in place and, quite simply, restrict the space available and often cause considerable inconvenience instead of serving as a purposeful screen.

The task forming the basis of the present invention is to satisfy the above-outlined desiderata and thereby obviate or at least reduce the drawbacks inherent in prior art arrangements of this type.

This task is solved according to the present invention in that the apparatus disclosed by way of introduction is given the characterizing features as set forth in one or more of the appended claims.

An apparatus according to the present invention makes it extremely simple to arrange protractible and retractible screen partitions with the aid of but few extremely simple

and economical elements. The elements and devices included in the apparatus according to the present invention are both simple in their design and simple to manufacture from different materials, it being, for example, possible to manufacture all major parts by extrusion of plastics, aluminium or the like. One major advantage inherent in an apparatus according to the present invention will be attained by the very fact that a retracted partition may be protracted to the desired length in an extremely rapid and efficient manner, quite simply by a single manual operation at one edge of the partition and, in addition, it is then an extremely simple operation to adjust the partition to any optional length. Thus, the partition may be completely or partly protracted and retracted in an extremely simple manner. All protraction operations may readily be carried out by means of a single manoeuvre, while retraction may possibly require two manual operations, but this is merely a slight inconvenience, since it is the protraction operation which most often needs to be carried out rapidly and using one hand. Moreover, the present invention permits angular adjustment of one or more parts of the protracted partition and an extremely simple and efficient adaptation to the substrate on which it stands.

The present invention will be described in greater detail hereinbelow with particular reference to the accompanying Drawings. Fig. 1 is a view of a screen constructed from elements and devices in the protracted state. Fig. 2 shows the screen of Fig. 1 in the retracted or compressed state. Fig. 3 is a cross-section through a hinge device according to one embodiment of the present invention. Fig. 4 is a cross-section of the hinge device of Fig. 3. Fig. 5 is a cross-section of the hinge device in another position than that shown in Fig. 3. Fig. 6 is a view of a screen constructed from elements and hinge devices according to Figs. 3-5. Fig. 7 is a view of a screen partition according to another embodiment of the present invention.

Fig. 8 is a cross-section through parts of the screen partition of Fig. 7.

As was mentioned above, Fig. 1 is a view of one embodiment according to the present invention with panel-shaped elements 1 which are of so-called cellular construction and consist of an elongate tubular profile with a number of intermediate walls or cell walls which divide up the cavities of the element into a number of cells. The outer walls may be of slightly greater thickness than the cell walls, but this is not, of course, necessary. At two diagonally opposing corners, the panel-shaped element 1 has an elongate groove and a bent flange which, together with the edge of the panel-shaped element 1, will have the shape of a U. The bending proper displays an inward bight for the formation of a snap catch device.

Like other devices and elements included in an apparatus according to the invention, the panel-shaped element 1 may be manufactured of plastics, aluminium or other suitable material. Nor is there anything to prevent different devices or elements in the apparatus according to the invention from being manufactured from different materials as long as the mix of materials does not entail a risk of corrosion or other inconveniences.

Fig. 3 shows a cross-section through one embodiment of a hinge device 9 according to the invention. The hinge device 9 consists of two substantially identical profiles 10 and 11 interconnected by means of an articulation 12. The articulation 12 may consist of the same material as the profiles 10 and 11, or some other suitable, perhaps softer, material than the profiles 10 and 11 and be united with the profiles 10 and 11, for example moulded, glued together, etc. The profiles 10 and 11 have two parallel walls 13 and 14 which are interconnected by means of web 15. On the inside of the free ends of the walls 10, 11 and 14, there are provided snap catch devices 18 and 19.

Fig. 4 shows the interconnection of panel-shaped elements 1 with the aid of the hinge device 9 of to Fig. 3. The walls 14 of the hinge device 9 extend past the edges of the elements 1, so that the snap catch devices 19 may engage in grooves, while the ends of the walls 10 with the snap catch devices 18 fit into the edge opening on the panel-shaped elements 1 formed by bending. By means of the hinge device 9, the two panel-shaped elements 1 are held together and interconnected such that they may readily be pivoted towards one another to the position illustrated in Fig. 5. If many panel-shaped elements 1 are interconnected by means of hinge devices 9, they may, obviously, form a complete partition or screen whose height is determined by the length of the panel-shaped elements 1. In such cases, the hinge devices may be continuous and be of the same length or height as the panel-shaped elements 1, or the hinge devices 9 may be provided at spaced-apart intervals.

Fig. 1 shows the practical application of the hinge device 9 for fixing a screen partition to a wall surface with the aid of an anchorage 20. At the opposing end of a screen partition secured with the aid of an anchorage 20, there is disposed a tube 23. A screen partition which is secured to a wall may, thus, be manoeuvred with the aid of the tube 23 which, in such instance, serves as a handle.

One example of such a partition is illustrated in Fig. 1 in the protracted state and, in Fig. 2, in the retracted or collapsed state. As will be apparent from the Drawings, the lower portion of the tube 23 may display a cross-tube 25, each end of which being provided on the underside with a foot 26 and 27. The feet 26 and 27 may, naturally, be adjustable in a per se known manner.

The hinge device 9 in Figs. 3-6 serves to realize a screen partition which is secured to a wall but is protractible and retractible. The panel-shaped elements included in this partition are of the same type as shown in Figs. 1 and 2.

The interconnection of two panel-shaped elements according to Fig. 1 realized by means of the hinge device 9 according to Fig. 3 is illustrated in Figs. 4 and 5. The arcs A and B illustrate the pivotal possibilities using the hinge device 9 according to Fig. 3 and, thereby, the panel-shaped elements 1. On pivoting of the panel-shaped elements 1 upwardly, they may arrive at a position completely adjacent one another in the same manner as illustrated in Fig. 5, while the webs 15 restrict pivoting of the panel-shaped elements 1 in the other direction, or downwardly in Fig. 4. Fig. 5 shows the mounting of a hinge device 9 to a wall with the aid of a wall anchorage 20.

The screen partition in Fig. 6 composed of devices and elements of Figs. 3, 4 and 5 differs from the screen partition realized according to Figs. 1 and 2 in that some means are required for keeping the panel-shaped elements substantially in alignment with one another in the protracted state. The end or edge tube 23 is provided, at its bottom, with a wheel 29, which could just as well be in the form of a fixed foot. A tube 34 extends from the lower end of the tube 23 and is directed lengthwise of the partition. At its opposite end in relation to the wheel 29 and the tube 23, the tube 34 is provided with a crosspiece 35 with a foot 36 disposed at each end. A friction material may suitably be provided on the underside of the feet 36. The screen partition shown in Fig. 6 is held in the illustrated position by the fact that the force acting on the feet 36 will be of such magnitude that the retraction force is overcome. The wheel 29 may be lockable in the braked position, in which event the parts 34-36 may be dispensed with.

Figs. 7 and 8 illustrate a further embodiment of the present invention in the form of a protractible and retractible screen partition which is composed of elements 1 and hinge devices 9 interconnecting the elements 1. The elements 1 consist of two plates 51 and 52 disposed on either side of a square tube 50 and supported from one another by

means of glass fibre inlay 53. The ends of the plates 51 and 52 are profiled for rigidification and configurational adaptation to the hinge devices 9 whose walls 10 and 15; and 11 and 15 are interconnected by means of a wall 54 which displays a portion 55 extending into the elements. This portion 55 carries means 56, 57 for cooperating with the inside of the edge profiling of the elements 1. In this embodiment, the web 15 is arched so as to eliminate any possible risk of entrapment.

The hinge device 9 most proximal the wall is provided with a square tube 58 for releasable securement on an angle rail 59 with the aid of angle nuts. The fourth element 1 counting from the wall is provided at the bottom with a telescopic leg 60 with a support wheel 61. The outermost element 1 is also provided with a telescopic leg 62 with a support wheel 63. The support wheels 61 and 63 are pivotal and lockable in the braked state. The telescopic legs 60 and 62 include a spring for constant urging of the support wheels 61 and 63 against a substrate, whereby unevenness in the substrate may be compensated for.

The outermost element 1 is further provided with a handle 64 for manoeuvring the screen partition. After protraction of the screen partition and locking of the support wheel 61 in the braked state, that portion of the screen partition formed by the outer elements 1 may be placed at a different angle than the portion formed by the inner elements 1. After locking of the support wheel 63 in the braked position, the outer portion of the partition will remain in the desired position.

In addition to considerable manufacturing and assembly-engineering advantages, an apparatus according to the present invention will also afford major advantages as regards capability to adapt screen partitions to the existing environment, since all panel-shaped elements may be given any desired colour whatever and be produced in as

good as any optional material. Similarly, the hinge devices may be manufactured of any optional material in any optional colour and be combined with different colours and sizes of the panel-shaped elements. Nor does the design of the articulation proper in the hinge device present any obstacles, but this may be of any conventional hinge type whatever.

CLAIMS

1. An apparatus for realizing a switchable, for example retractible and protractible, screen partition which is releasably secured to a wall at one side edge, characterized by a number of panel-shaped elements (1) which are pivotal in at least one direction and are interconnected, and a support (29, 60-63) on at least one of the elements (1), the support resting on a substrate, for example a floor, and releasable anchorage means being provided between the wall and the element most proximal the wall.

2. The apparatus as claimed in Claim 1, characterized in that a hinge device (9) is arranged between each one of the panel-shaped elements (1, 37).

3. The apparatus as claimed in Claims 1 and 2, characterized in that the hinge device consists of two generally V-shaped profiles (10, 11) which are pivotally interconnected at the apex (12) and which are connected to the edge of the panel-shaped element (1, 37).

4. The apparatus as claimed in Claims 1 and 2, characterized in that there is provided, on the opposing side of the panel-shaped element (1) in relation to the opening, a groove (4) in the proximity of the edge, for cooperation with snap catch devices (19) of the hinge device (9).

5. The apparatus as claimed in Claim 1, characterized in that a support is provided on the outermost element and a support on one of the centrally disposed elements.

6. The apparatus as claimed in Claim 5, characterized in that the supports are wheels which are preferably pivotal and brakable.

7. The apparatus as claimed in Claim 6, characterized in that the support wheels are mounted on the end of a telescopic leg.

8. The apparatus as claimed in Claim 7, characterized in that the telescopic leg includes a spring for constant urging of the support wheel against the substrate.

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AMENDED CLAIMS
[received by the International Bureau
on 22 March 1991 (22.03.91);
original claims 1-8 replaced by amended claims
1-6 (1 page)]

1. An apparatus for realizing a switchable, for example retractible and protractible, screen partition which is releasably secured to a wall at one side edge, wherein a number of panel-shaped elements (1) which are pivotal in at least one direction and are interconnected, and a support (29, 60-63) on at least one of the elements (1), the support resting on a substrate, for example a floor, and releasable anchorage means being provided between the wall and the element most proximal the wall, c h a r a c t e r i z e d in that a hinge device (9) is arranged between each one of the panel-shaped elements (1,37) and in that the hinge device consists of two generally V-shaped profiles (10,11) which are pivotally interconnected at the apex (12) and which are connected to the edge of the panel-shaped element (1,37).

2. The apparatus as claimed in Claim 1, c h a r a c t e r i z e d in that there is provided, on the opposing side of the panel-shaped element (1) in relation to the opening, a groove (4) in the proximity of the edge, for cooperation with snap catch devices (19) of the hinge device (9).

3. The apparatus as claimed in Claim 1, c h a r a c t e r i z e d in that a support is provided on the outermost element and a support on one of the centrally disposed elements.

4. The apparatus as claimed in Claim 3, c h a r a c t e r i z e d in that the supports are wheels which are preferably pivotal and brakable.

5. The apparatus as claimed in Claim 4, c h a r a c t e r i z e d in that the support wheels are mounted on the end of a telescopic leg.

6. The apparatus as claimed in Claim 5, c h a r a c t e r i z e d in that the telescopic leg includes a spring for constant urging of the support wheel against the substrate.

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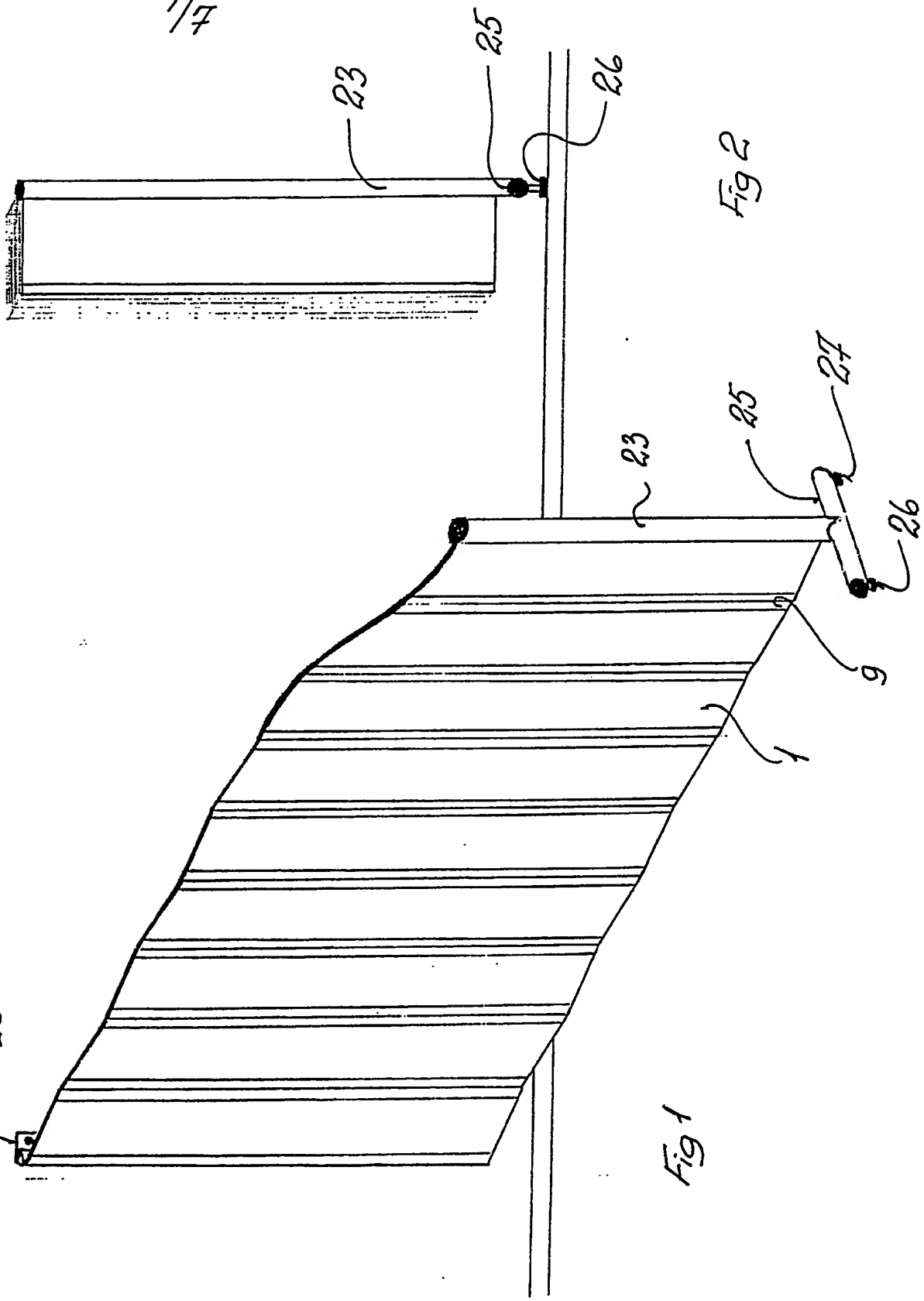


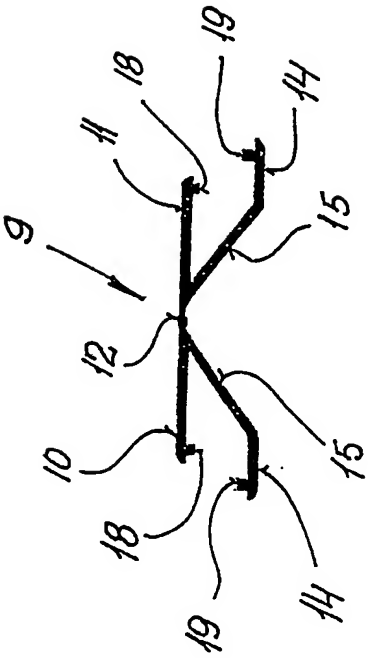


Fig 3

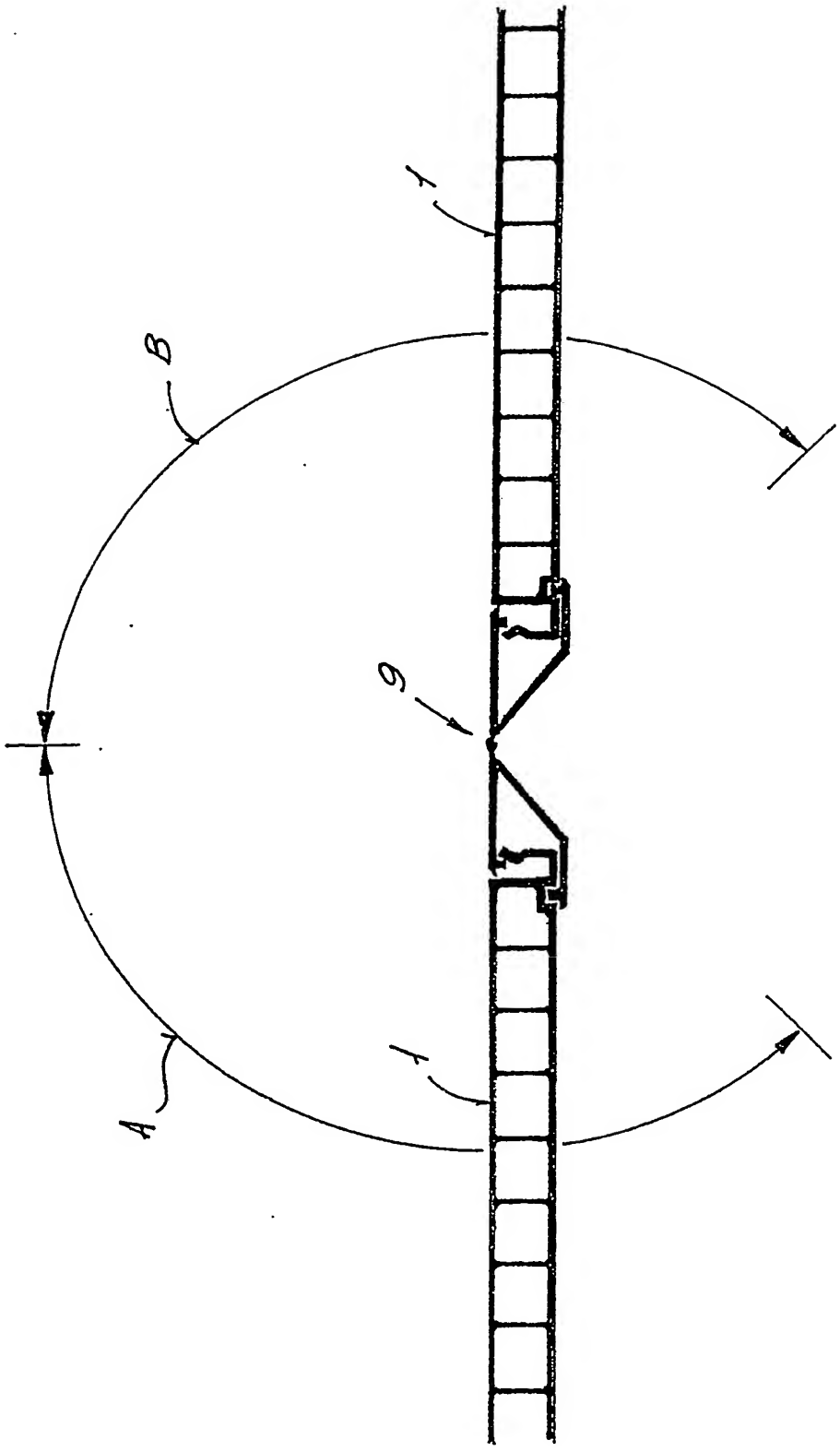


Fig 4

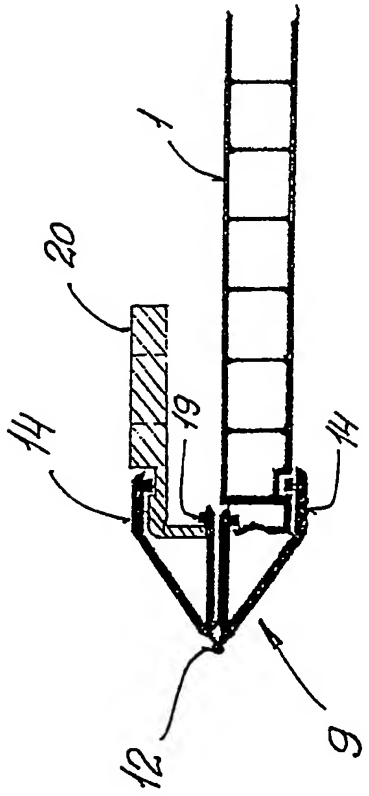


Fig 5

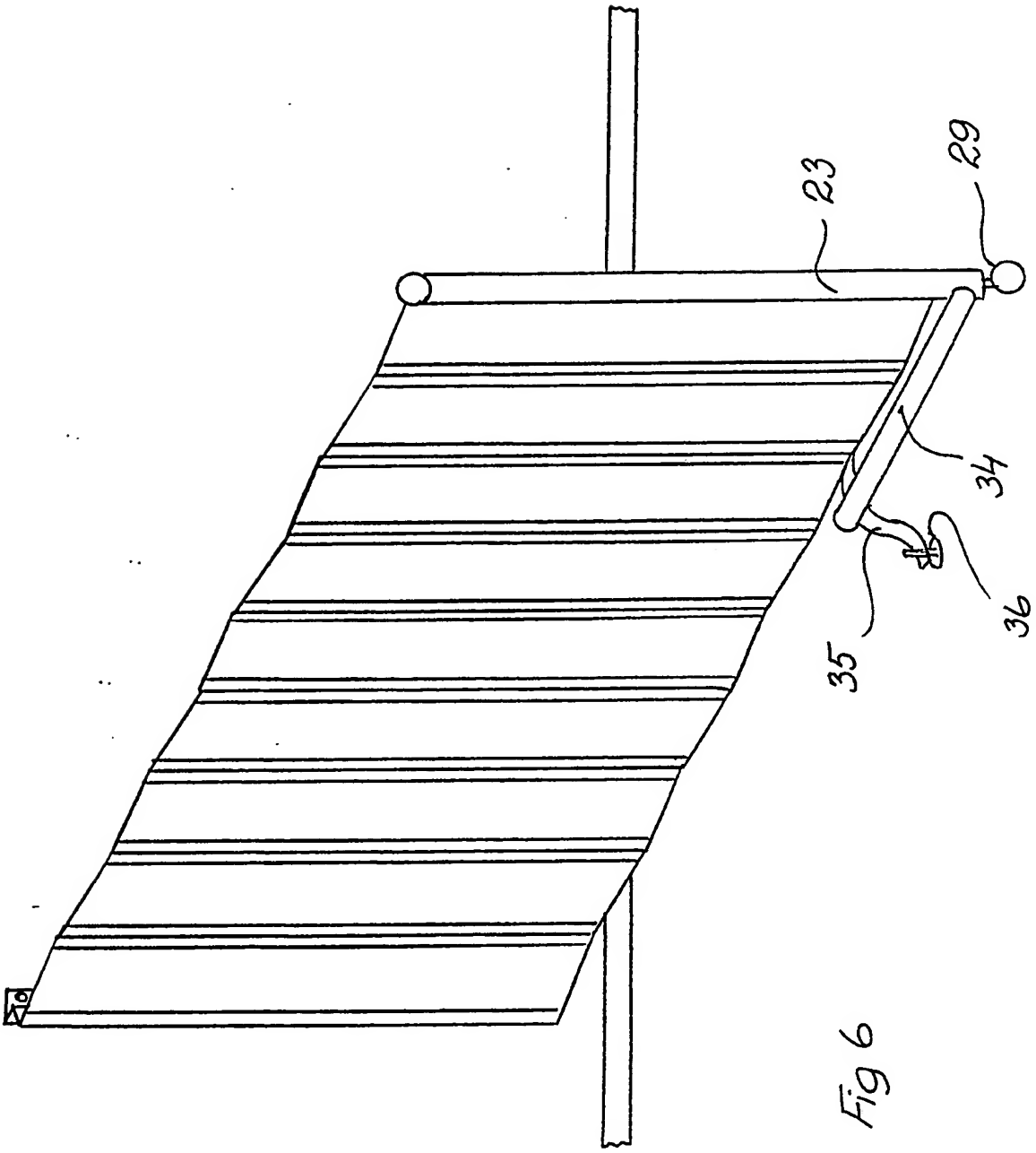


Fig 6

Fig 7

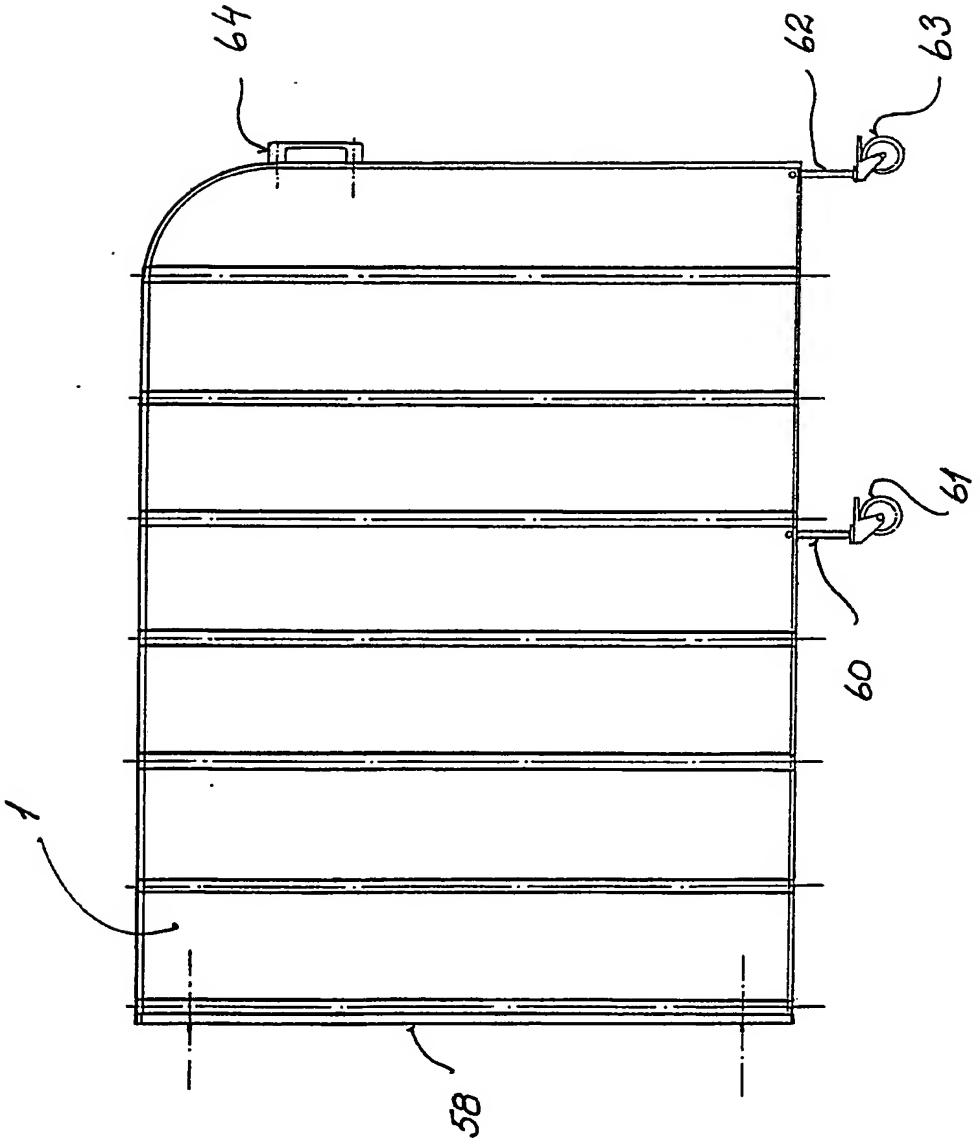
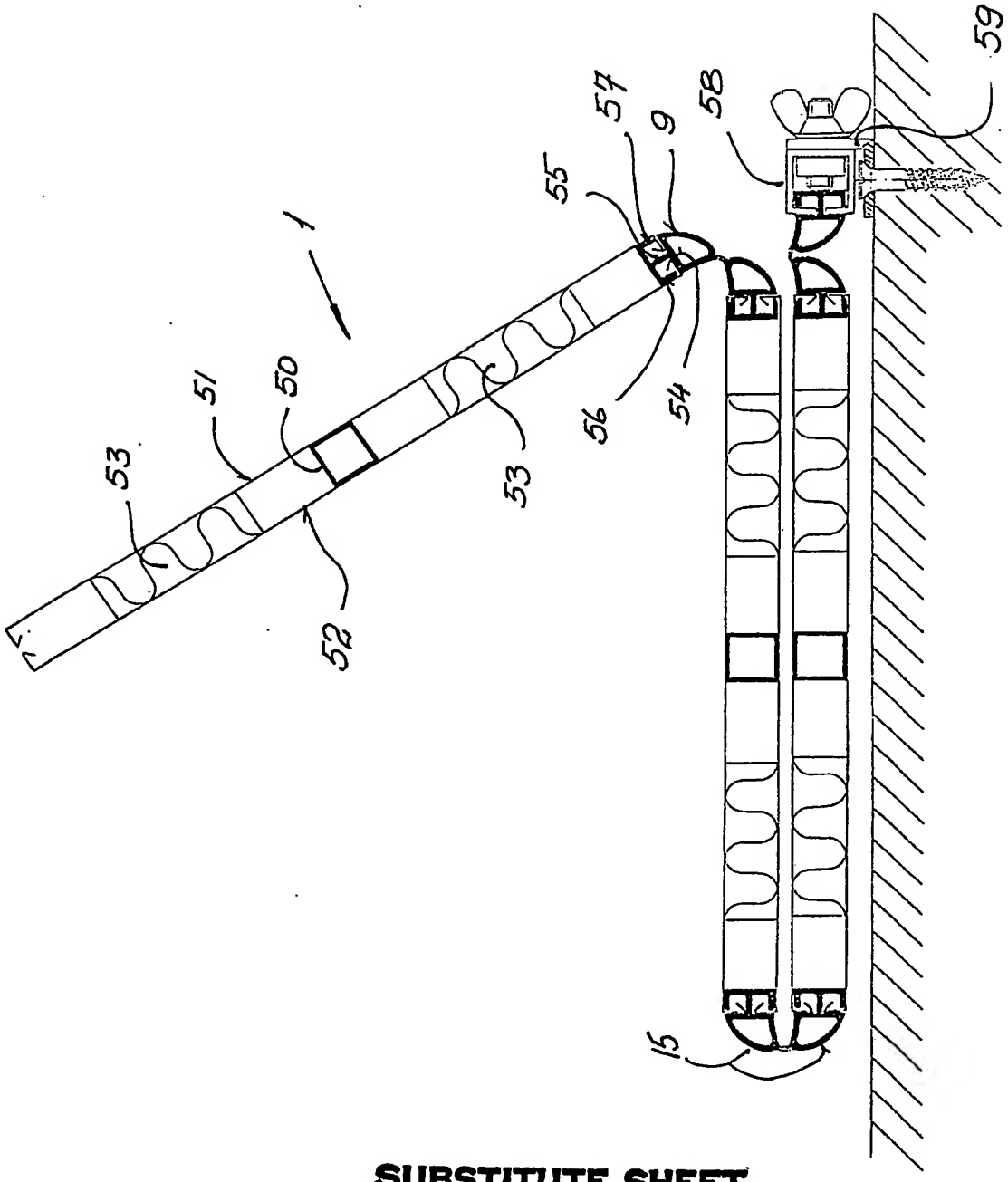


Fig 8



INTERNATIONAL SEARCH REPORT

International Application No PCT/SE 90/00765

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all)[6]

According to International Patent Classification (IPC) or to both National Classification and IPC

IPC5: E 04 B 2/74

II. FIELDS SEARCHED

Minimum Documentation Searched[7]

Classification System	Classification Symbols
IPC5	E 04 B

Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in Fields Searched[8]

SE,DK,FI,NO classes as above

III. DOCUMENTS CONSIDERED TO BE RELEVANT[9]

Category *	Citation of Document,[11] with indication, where appropriate, of the relevant passages[12]	Relevant to Claim No.[13]
X	CH, A5, 654367 (MÖBELFABRIK MENZIKEN FLORIAN WEBER AG) 14 February 1986, see page 3, column 1, line 65 - page 4, column 1, line 2; figures 1-8	1,2,5
A	--	3,4,6-8
A	DE, A1, 3639668 (CHANNEL-KOR SYSTEMS, INC.) 11 June 1987, see column 5, line 23 - column 6, line 34; column 11, line 42 - line 53; figures 1-3,21	1-4
	--	
A	GB, A, 2097834 (STEELCASE INC.) 10 November 1982, see page 1, line 32 - line 55; page 1, line 88 - line 119; page 2, line 75 - line 86; figures 1,2,9	1-5
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IV. CERTIFICATION

Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report
28th January 1991	1991 -02- 12
International Searching Authority	**Signature of Authorized Officer**
SWEDISH PATENT OFFICE	Ingemar Hedlund

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Patent document cited in search report	Publication date	Patent family member(s)		Publication date
CH-A5- 654367	86-02-14	NONE		
DE-A1- 3639668	87-06-11	AU-B-	599611	90-07-26
		AU-D-	6500286	87-05-28
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		DE-A-	2911094	79-10-11
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